Meat Safety Enhancement Program

Establishing Performance Standards for Beef Slaughter

SUMMARY

For AQIS to recommend an establishment for inclusion in the Meat Safety Enhancement Program it had to be able to demonstrate sustained compliance against the regulations and any additional relevant importing country requirements. To enable this assessment to be made, and for that assessment to be transparent, measurable performance standards had to be developed.

The United States "HACCP Inspection Models Project" (HIMP) was used as a guide in identifying the necessary performance attributes to be measured. Measurements on the performance at a number of compliant US listed Australian slaughter establishments were taken and used for comparison purposes.

Performance standards obtained from this data are positively biased due to the compliant nature of the selected group of establishments. This ensures that the standards developed for MSEP participation contain an inbuilt safety margin.

PERFORMANCE DATA IDENTIFICATION

To enable a transparent and defendable assessment of compliance that can be easily measured, various performance attributes had to be defined. The United States "HACCP Inspection Models Project" (HIMP) was used as a guide in identifying the necessary performance attributes to be measured.

Food Safety

Food Safety attributes are those measures considered essential to ensure food safety is not compromised. These attributes are known to affect food safety. These are:

- processing animals that would be considered abnormal, particularly downer stock;
- processing carcases or offal that contained hazards that could be transmitted to consumers causing food borne illness such as cysticercosis, toxaemia, pyaemia, septicaemia;
- contamination by material that could lead to outbreaks of food borne illness if consumed such as faeces, ingesta and milk and
- microbiological attributes that indicate contamination by faeces, ingesta and milk such as E.Coli and Salmonella.

AQIS concurred with FSIS in selecting these attributes as indicators of food safety.

Food Suitability

There are other attributes that affect the suitability of the food to the consumer. In the United States these are referred to as Other Consumer Protections. In Australia these are broadly classified under the name "wholesomeness". This description is also used in our national regulations

The Australian regulations allow for the responsibility for the control of wholesomeness to be shared between the processing industry and AQIS. In an establishment with traditional government inspection AQIS has the prime responsibility for pathology detection and correction whilst the slaughtering establishment has prime responsibility for contamination prevention, detection and correction. AQIS still controls contamination aspects of processing where the processor isn't able to demonstrate that control. Attributes of relevance to contamination and pathology in terms of food wholesomeness are:

- pathology related to suitability of food such as fractures, most parasitic lesions.
- contamination related to suitability for food such as hair, bile, grass seeds.

AQIS concurred with FSIS in selecting these attributes as indicators of wholesomeness or food suitability although AQIS groups these differently to FSIS.

COLLECTION OF DATA

Selection of Establishments

Eight currently listed US establishments were selected for the collection of the data. These establishments had to meet a number of criteria which were:

- establishments must have passed routine AQIS audits;

- establishments must not be in the Scheme for Corrective Action and Sustained Operational Compliance, the AQIS system for management of poor performance;
- establishments must source cattle from similar areas to that of the trial establishment; and
- establishment must have been audited by FSIS in the last 5 years and passed with no Notices of Intended Delistment or actual delistment.

The overall assumption is that the performance of these establishments is known to be acceptable to FSIS.

No establishments were selected that had failed FSIS audits therefore the data collected represented the performance of establishments that can pass FSIS audit. The sample set is conservative and skewed toward compliance. This allows the performance standards developed for MSEP participation to contain an inbuilt safety margin.

The 8 beef slaughtering establishments that were selected represented about a third of Australia's beef processing capacity at the time of collection.

Period of data collection

Data was collected during the same period that the trial establishment collected data. This was to ensure that cattle were arriving in a similar state of cleanliness to the stock being processed at the trial establishment.

Collection of data

Each selected establishment was visited and the necessary data was obtained from both company and AQIS monitoring and verification records. To ensure validity, company data was correlated with the independently collected AQIS data.

Post mortem carcase and offal pathology monitoring systems were not designed to specifically measure the performance of post mortem. Some measurements on the performance of AQIS staff weren't able to be collected prior to the companies' trimming stations. This most likely resulted in a higher performance standard than was actually being achieved.

AQIS is investigating ways of more effectively measuring performance of staff involved in post-mortem procedures. Once this is completed these performance standards will be reviewed.

Analysis of the data

The data from each establishment was analysed, giving:
- an average for each attribute measured;
- the range of measurements taken;
- the number of defects that occurred on individual days; and
- the number of days within a 25 day window that defects were observed.

A summary of this analysis is at attachment 1.

As mentioned above the analysis of the results of the AQIS post mortem inspection indicate a sensitivity higher that the documented research would have us believe. Until further work can be

conducted as part of a wider risk analysis project the performance standards derived will be used for comparison as they are more conservative than would otherwise be the case.

SETTING OF PERFORMANCE STANDARDS

Performance standards were set for the food safety and suitability criteria

Food Safety Performance Standards

Standards directly related to food safety have been nominated as having a tolerance of zero as this can be the only accepted measure of performance. As the tolerance is 0 no window is necessary to measure the sustainability for compliance.

This is identical to HIMP.

Wholesomeness (suitability) Performance Standards

Standards related to issues affecting wholesomeness of product have been set.

The standards related to the companies' ability to detect pathology at post mortem sorting are based on the best 75% of sample establishments on a day to day basis and over the course of a 25 working day sample window.

There are tolerances for breaches of suitability or wholesomeness criteria providing appropriate corrective and preventive action is taken. A moving window is used to measure this tolerance which is the same as HIMP, enabling a more direct comparison.. The performance standards for wholesomeness are based on those existing in the current Meat Hygiene Assessment monitoring program. (MHA).

See also comments about the collection of the data and it's analysis regarding the sensitivity of AQIS inspection.

Review of the Performance Standards

Like FSIS, AQIS is taking a more objective approach to the measurement of performance and compliance. To do this AQIS is risk profiling the meat processing industry and its processes. The result of this work could be that AQIS will need to review these performance standards. AQIS will consult with FSIS over any change to these standards. Where standards are raised establishments will be expected to comply.

Attachment 1

Performance Data

Window (25 working days between October and January)

Est.	Total Kill	Sample size	Sample %age	AM-Suspect	PM-Infectious	ZT (MHA)*	PM-Carcase Wholesome*	PM-Offal Wholesome*	MHA Carcase#	MHA Offal#
A	43677	3136 50/day	7.2%	0	0	0.006% 2-1 (2%)	0.48% 1-3 (6%) 3-2 (4%) 6-1 (2%)	0.72% 1-2 (4%) 10-1 (2%)	0.3 0.1-0.7	0.06 0-0.11
B	22876	2150 50/day	9.4%	0	0	0.19% 4-1 (2%)	0.23% 5-1 (2%)	0.14% 1-3(6%)	0.02 0-0.15	0.002 0-0.004
C	34490	2560 64/day	7.4%	0	0	0.08% 2-1 (1.6%)	0%	0%	0.1 0-0.2	0.004 0-0.026
D	155491	4800 54/day	3.1%	0	0	0.19% 3-1 (1.9%)	0.23% 2-2 (3.8%) 7-1 (1.9%)	0.19% 3-1 (1.9%)	0.53 0.3-0.9	0.06 0-0.71
E	31200	2880 60/day	7.7%	0	0	0.10% 3-1 (1.7%)	0.31% 9-1 (1.7%)	0%	0.3 0.2-0.8	0.03 0.01-0.05
F	13500	1250 50/day	9.26%	0	0	0.72% 1-2 (4%) 7-1 (2%)	1.36% 1-4 (8%) 3-2 (4%) 7-1 (2%)	0.32% 1-3(6%) 3-1 (2%)	0.70 0.4-1.82	0.07 0.02-0.18
G	14102	1680 60/day	12%	0	0	0.24% 2-1 (1.7%)	0.5% 2-2 (3.4%) 5-1 (1.7%)	0.24% 1-3 (5%) 1-1 (1.7%)	0.31 0.2-0.6	0.02 0-0.1
H	8161	800 32/day	9.8%	0	0	0.63% 1-2 (6.2%) 3-1 (3.1%)	0%	0%	0.39 0.19-0.8	0.02 0-0.5
Average	323487	19346	6.0%	0	0	0.27%	0.53%	0.08%	0.33 0-1.82	0.028 0-0.5
Standard				0	0	0	No more than 1 day ≥6% (3 defects)	No more than 1 days ≥6% (2 defects)	>1.0	>0.5

* indicates percentage detected from samples taken, plus spread of detection over 25 shift along with percentage detected from a single days samples e.g. If the number of samples is 50 per day then "2-1 (2.0%)" is 2 days with 1 detection and each of those detections indicates a prevalence of that defect on that day of 2.0%
# indicates average defect rating plus range of results

Meat Safety Enhancement Program Performance Standards - Beef

On-line Performance Standards for Cattle

Categories	Standard
Food safety	
Ante-Mortem - Suspect (for example: neurological conditions, moribund, febrile, non-ambulatory)	Zero
Post Mortem – Potentially infectious conditions (for example: septicaemia/toxaemia, pyaemia, cysticercus	Zero
Contamination – Indicative of the presence of pathogens Faeces, ingesta or milk	Zero
Wholesomeness - non-infectious conditions	
Post Mortem – Carcase Pathology (for example: anaemia, arthritis, emaciation, fractures, icterus, localised abscess, mastitis, metritis, nephritis, oedema, pyelonephritis, parasites [other than cysticercus], neoplasms, pericarditis, pleuritis, pneumonia, uraemia	≤6%
Post mortem – Offal pathology (for example: cystic kidneys, enteritis/gastritis, faecal contamination of viscera, icterus, nephritis, pyelonephritis, parasites [other than cysticercus], peritonitis	≤6%
General carcase contamination* (for example hair, bile, bruise, rail fallout)	<1.0
General offal contamination*	<0.5

* "Meat Hygiene Assessment" defect criteria and scoring system used for assessing contamination.

To determine whether process control has remained within acceptable limits for issues involving wholesomeness the maximum number of days in any 25 day period that the limit can be exceeded.

Category	Maximum number of days the limit may be exceeded
Post Mortem – Carcase Pathology – non-infectious	1
Post mortem – Offal pathology – non-infectious	1
General carcase contamination	1
General offal contamination	1

Microbiological Performance Standards for Cattle

Microbiological limits for Salmonella and E.Coli (CFU/cm²)

	Acceptable	Marginal	Unacceptable
E.Coli	0	10-100	>100
Salmonella	0	0	0

Carcase prevalence limits

	Acceptable	Marginal	Unacceptable
E.Coli*	95%	5%	0
Salmonella	100%	0%	0%

* In any 13 day window